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SCOTTISH HOME AND HEALTH DEPARTMENT

HOSPITAL PLANNING

The Importance of Detail

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SCOTTISH HOME AND HEALTH DEPARTMENT

HOSPITAL PLANNING

THE IMPORTANCE OF DETAIL

INTRODUCTION

1. This memorandum has been compiled with the intention of assisting those who design and equip new hospital accommodation, by drawing their attention to unsatisfactory features which have been observed during visits to recently completed hospital buildings.

2. Even small errors or omissions at the planning, construction or equipment stages may lead to serious difficulties in operating a new unit. They occur most readily where several planning interests are concerned or where, in relation to one particular area or installation, the work of more than one trade is involved. Errors and omissions are frequently difficult to correct, and it is clearly important that so far as possible they should be foreseen and avoided.

3. A number of points of this kind are noted in this memorandum. At least one example of each has been observed in some recently completed hospital building. This list has been prepared, not as an exercise in obvious fault finding, but in the hope that it may be of service to medical and administrative planners, to architects and engineers and those who have the responsibility of approving plans or who supervise construction and the installation of equipment and fittings.

4. The areas and installations covered are as follows:-

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Defect	*Recommendation*	*Reference*
Entrances, circulation, etc.		
1. Detached, frequently used buildings with no covered access from the main building.	-	-
2. Canopy at door too low to permit ambulances to off-load patients under shelter.	The largest ambulances used by the Scottish Ambulance Service are 17 ft. long, 7 ft. wide, and 8 ft. 4 ins. high (including flasher beacon). Entrances for ambulances should preferably be of the "drive through" type. (Ambulance turning circle: 51 ft.)	
3. Traffic routes within hospital entrances crossing unnecessarily.	A careful appreciation should be made of the types of traffic (patients, staff, supplies, records, etc.) passing to and from departments. In particular, routes of in-patients, patients for admission, and accident patients should be separate from general traffic. General traffic should not pass through working departments.	Building Note No. 3 describes the chief traffic routes in a hospital and provides an introduction to this subject.
4. Man-handling of heavy objects in limited space with no provision for mechanical assistance.	Particular examples to be noted and avoided are stores delivery points in awkward corners up or down steps or ramps, and lack of proper provision for moving heavy items of plant and equipment where regular maintenance is required.	-
5. Porter's station badly placed therefore not used.	It should be related in a commanding position to the entrance it serves. A bay is preferred to a room.	Building Note No. 18, paragraph 56.
6. Corridors too narrow for trolleys or wheel chairs to pass.	Corridors should be at least 7 ft. wide in the clear for wheel chairs and trolleys (8 ft. for beds).	Planning Note No. 1 and Building Notes Nos. 6, 8, 9, 12, 21 and 22.
7. Busy telephone exchange room placed so prominently as to be the main enquiry point with consequential interruption of operator's work.	The telephonist may on occasion (e.g. at night) have to deal with enquiries, but the exchange room must not be placed in such an obvious position as to attract casual enquiries.	Building Note No. 18, paragraph 53.

Defect	*Recommendation*	*Reference*
Entrances, circulation, etc. (Contd.)		
8. Distraction of telephone operator by location of additional items (e.g. the central wireless control and the master clock) in the telephone exchange room.	The master clock may conveniently be placed in the main switch room.	Building Note No. 18, paragraph 53.
9. Inadequate changing accommodation for non-resident staff.	The need for non-resident changing accommodation is increasing. Unless it is centralised, secure, properly ventilated and suitably equipped (e.g. with drying racks etc.) it is unlikely to be satisfactory.	Building Note No. 18, paragraphs 37 to 43.
10. No suitable parking space for trolleys, wheelchairs, mobile telephones, etc.	Bays are required for sanichairs in wards and for wheelchairs and patient trolleys in X-ray, casualty, O.P.D. theatre suites, labour rooms, etc. A wheel chair requires 10 sq. ft. and a patient trolley 20 sq. ft. These spaces must be planned to allow for manoeuvring these vehicles.	Planning Note No. 1; Building Notes Nos. 4, 12, 18, 20, 21, 22, 23.
11. Lecture rooms in which latecomers cannot avoid disturbing speakers.	This is a matter of design or discipline or both.	-
12. Corridors and doorways not designed to allow for the turning circle of beds or trolleys.	8 ft. corridors (see paragraph 6) allow sufficient turning space for beds. In this situation door width relates to corridor width. The forthcoming Design Note on Door Assemblies analyses this relationship, and suggests standard door 4 ft. 8 ins. and 6 ft. wide (and 6 ft. 10 ins. high) where beds are to be admitted.	Design Note on Door Assemblies (in draft).
Ward units		
13. Small separate wards leading to under-use of ancillary rooms and difficult nurse-staffing problems.	This must be carefully considered at the briefing stage.	Planning Note No. 1, paragraphs 24 to 27.
14. Sister's room placed outwith the bed area of the ward and therefore little used.	The closer Sister's room is related to the working rooms and bed areas the more it will be used.	Planning Note No. 1, paragraph 80.
15. Nurses' stations unused except for storage because of poor location in relation to the ancillary rooms and unsatisfactory design.	It must be near the preparation and disposal rooms and provide supervision of some bed areas.	Planning Note No. 1, paragraphs 65-66.

Defect	Recommendation	Reference
Ward units (Contd.)		
16. Unsatisfactory grouping of the ancillary rooms in relation to one another and to bed areas in ward units.	Preparation, disposal, sluice, kitchen, and nurses' station are the essential nucleus of working rooms related to the bed areas.	Planning Note No. 1, paragraph 65 et seq.
17. Inadequate space within bed curtains at both ends and sides.	Normally the curtains should enclose an area 8 ft. by 9 ft.; for beds devoted to intensive nursing care this area should be increased to 100 - 110 sq. ft.	Planning Note No. 1, pages 32-33.
18. Poor selection of bed curtain material as regards type, quality and colour.	Curtain material should be capable of being laundered (or perhaps dry-cleaned) and must be shadow proof.	Planning Note No. 4, paragraph 67.
19. Inadequate space at bed ends in single bed rooms, and between beds in multi-bed areas.	Single rooms should be at least 10 ft. along the axis of the bed, (11 ft. for intensive nursing care); in multi-bed areas, bed ends should be 6 ft. 6 ins. apart (minimum).	Planning Note No. 1, page 33.
20. Beds difficult to manoeuvre or to lock.	This unfortunately continues to be true even with new beds although suitable models are available.	-
21. Bed curtain rails and runners not allowing curtains to be drawn back effectively.	Bed curtain rails should be turned parallel to the wall at the bedhead so that the bunched curtain and runners do not project and mask the patient.	Planning Note No. 4, paragraph 67.
22. Dayrooms exposed, draughty and uninviting for patients to use.	Domestic size and character is desirable.	Planning Note No. 1, paragraph 63 and pages 36-37.
23. Dayrooms remote from passing nurse observation.	Day spaces should be sited so that they may be readily supervised by nurses going about their normal duties.	Planning Note No. 1, page 37.
24. Inadequate observation panels in the corridor walls of bed areas.	Observation panels should extend horizontally as far as possible on corridor walls to give an unimpeded view of the patients. Maximum sill height 4 ft. 4 ins.; minimum window head height 6 ft.	-
25. Clear glass panels in doors of treatment rooms and store rooms in ward units.	These doors should not be glazed.	Design Note on Door Assemblies (in draft.)

Defect	Recommendation	Reference
Miscellaneous		
26. Narrow domestic service rooms in which two occupants cannot work, and which are unsuitable for bulky equipment.	Avoid long narrow plan shapes. 8 ft. width is recommended.	-
27. Corners not rounded and dust collecting ledges even in new operating theatres.	-	-
28. Inadequate provision in radio-diagnostic departments for patients having barium examinations.	Separate supervised holding area is necessary for patients undergoing serial tests. Easily accessible W.C. compartments related to the barium rooms should be carefully considered. 25 sq. ft. with outward opening door is recommended. Easily cleaned fittings and floor finish are important.	-
29. "Admission Rooms" in ward units situated at a distance from centres of nursing work and therefore unused at night when supposed to be of maximum value.	-	-
30. Admission suites in maternity units located inconveniently in practice.	In a maternity unit it may be desirable to place the admission unit near the labour suite so that it can be properly staffed (especially at night) even if as a result the unit is not immediately adjacent to the ambulance entrance.	-
Out-patient departments		
31. Excessive number of clocks (e.g. eight clocks clocks visible from a single point in one new out-patient department).	There is a tendency to request more clocks than are justified.	Guidance on clocks is given in the Engineering Section of Hospital Building Notes.
32. Waiting areas in out-patient departments placed opposite consulting rooms with doors and furnishings so arranged that consultants and patients are clearly visible at the desk when consulting room door opened.	To be avoided.	Planning Note on Out-Patient Departments (being drafted)

Defect	*Recommendation*	*Reference*
Out-patient departments (contd.)		
33. Waiting space out of sight of reception point in out-patient department.	The reception point and forward waiting area for a group of consulting/examination rooms should be closely related.	Planning Note on Out-Patient Departments (being drafted).
34. Multiple disadvantages from small undressing cubicles in consulting suites. These relate to amenity, organisation, staff duties and auditory privacy.	Combined consulting/examination rooms are recommended without separate undressing cubicles.	Planning Note on Out-Patient Departments (being drafted).
35. Lack of auditory privacy in consulting rooms in out-patient departments.	This is particularly noticeable where patients are waiting. Undressing cubicles connecting directly into consulting rooms give a false sense of security in this respect. Planning of consulting rooms should have regard to the needs of auditory privacy, and published guidance on sound insulation should be consulted.	"Acoustics, Noise and Buildings" Parkin and Humphreys, Faber. Design Note on Partitions and Wall Finishes (in draft). Design Note on Door Assemblies (in draft). Planning Note on Out-Patient Departments (being drafted).
36. Lack of privacy in the use of weighing machines in out-patient departments.	Weighing machines should preferably be in the consulting/examination rooms.	Planning Note on Out-Patient Departments (being drafted).
37. Consulting rooms visible from entrance drive unless the blind is drawn.	Consulting rooms should preferably not be overlooked; in particular they should be sited away from the noise of vehicles. See also item 64.	Planning Note on Out-Patient Departments (being drafted). Design Note on Windows (in draft).
38. Consulting rooms overlooked by passengers on the top of double decked buses.	See items 37 and 64.	-
39. Patients' gait having to be examined in corridor areas as consulting/examination rooms too small.	Minimum length should be 15 ft.	Planning Note on Out-patient Departments (being drafted).
40. Examination couches placed against a wall.	Space at either side of examination couches is a considerable advantage to staff and patients.	Planning Note on Out-Patient Departments (being drafted).
41. Doors between consulting/examination rooms so placed that space is wasted and functional requirements impeded.	The location of inter-connecting doors should facilitate the doctor's movement between rooms and avoid the creation of "dead" space.	Planning Note on Out-Patient Departments (being drafted).

Defect	Recommendation	Reference
Doors		
42. Noise from doors.	Apart from staff discipline this raises questions of the type and weight of door (and partition), whether there should be a door at all, detailed design of door and stops, choice of ironmongery, door closers etc. A planned maintenance programme helps to obviate trouble.	Design Note on Door Assemblies (in draft).
43. Lack of auditory privacy and interruptions from staff movements during the course of a consultation.	The acoustic insulation properties of communicating doors (and partitions) should be carefully considered. The design of consulting suites and the method of working have important effects on reducing unnecessary staff movements during consultations.	Design Note on Door Assemblies (in draft). Design Note on Partitions (in draft). Planning Note on Out-Patient Departments (being drafted). "Acoustics, Noise and Buildings," Parkin and Humphreys, Faber.
44. Doors too narrow to permit passage of beds with attachments.	See item 12.	Design Note on Door Assemblies (in draft).
45. Doors to W.C.s too narrow to admit sanichairs.	3 ft. minimum width.	Design Note on Door Assemblies (in draft).
46. Doors opening inwards in W.C.s with no means of opening in an emergency.	Doors in patients' W.C.s should be readily openable outwards, and be capable of being unlocked from outside (e.g. by a coin).	Planning Note No. 1, page 34 Design Note on Door Assemblies (in draft).
47. Doors in clusters impeding each other.	-	-
48. Damage to floor in radio-diagnostic department due to doors being too heavy or door frames too light.	-	-
49. Defective door frames resulting in cracked plaster.	Undue trimming of specifications for economy should be guarded against. The architrave should provide a handsome cover at plaster edges.	Design Note on Door Assemblies (in draft).
50. Door frames and corners inadequately protected against damage from trolleys etc.	The incidence of damage is related to width of openings. It may not be practicable to provide bump rails at all possible damage points, but corners and door frames are particularly susceptible and should have stout protection up to 3 ft. minimum above finished floor level. Consideration should be given to a form of protection such as P.V.C. or metal door frames.	Design Note on Door Assemblies (in draft).

Defect	Recommendation	Reference
Doors (contd.)		
51. Doors too low to admit standard apparatus.	Standard door height 6ft. 10 ins.	Design Note on Door Assemblies (in draft).
52. Observation panels in doors too high for smaller members of staff.	Sill height 4 ft. 2 ins. with a 1 ft. 4 ins. square panel.	Design Note on Door Assemblies (in draft).
53. Exterior doors inadequately protected against prevailing winds and weather.	Canopies or recessed doors help to guard against rain penetration, and door seals should be carefully detailed. Damage and inconvenience often result from wind slamming doors (especially wide doors) and this should be considered during design.	-
54. The fitting of locks indiscriminately, including doors to rooms where security is not required.	Door schedules should only specify locks where these are required for security, or privacy (e.g. W.C.s.)	-
Windows		
55. Windows with inferior quality catches giving trouble in use.	This is a false economy in ironmongery. The Study Group on Windows requires that "operating gear should be robust and reliable"; prototypes are to be tested and the findings published (see reference).	Design Note on Windows (in draft).
56. Windows difficult or impossible to clean.	The economical height limit for ladders is 35 ft. Window cleaning should be considered at design stage. Cleaning costs are analysed in Appendix 2 of the draft Design Note.	Design Note on Windows (in draft).
57. Space between double-glazing requiring cleaning, yet access difficult.	Except with sealed units, one sash should be openable.	-
58. Windows of excessive size resulting in nuisance from glare and heat gain.	This common complaint is particularly serious in hospitals. Window sizes should be related to daylighting calculations, particularly in critical areas such as patients' bedrooms.	A bibliography on daylighting is contained in the Design Note on Windows (in draft).

Defect	*Recommendation*	*Reference*
Windows (contd.)		
59. Windows of a type difficult to use in ventilating ward areas.	Window design must allow for adequate air changes under different weather conditions. Various possibilities are examined in the draft Design Note on Windows. Easily operated mechanism is essential for adjusting high level opening lights.	Design Note on Windows (in draft.
60. Window sills in some rooms so high as to obscure the view when sitting and in others too low to ensure privacy.	Height considerations are extensively analysed in the draft Design Note on Windows.	Design Note on Windows (in draft).
61. Lower parts of windows easily opened wide by patients with attendant risks in upper storeys.	-	Design Note on Windows (in draft).
62. Semi-obscured glass not giving adequate privacy in undressing cubicles and in a post-mortem room.	Glazing should be avoided in these circumstances. (See also item 34).	-
63. Venetian blinds which either do not work or are difficult to operate.	This difficulty is sometimes occasioned by the operating gear being at one side of the blind (e.g. up against a wall) when it would be more convenient at the other. Such points should be considered when scheduling blinds.	-
64. Lack of privacy through windows in out-patient departments, wards, and nurses' homes.	If critical windows are unavoidably liable to be overlooked (e.g. from top of passing buses or adjacent buildings) high sill levels, obscured glass, or blinds should be considered.	-
65. Glazed partitions into which people may walk.	This can be very dangerous; design techniques such as buffer bars, astragals etc. should be considered.	-
66. Stores ventilated only by windows which when opened in wet or windy weather allow rain to enter and documents to be blown off desks.	Where opening windows are inappropriate, alternatives such as adjustable louvres or "hit-and-miss" ventilators should be considered.	-
67. Glazed semi-obscure partition walls at the corridor side of offices distracting the attention of occupants.	If borrowed light is essential in such cases the glazing is best provided above doorhead level.	-

Defects	Recommendation	Reference
Windows (contd.)		
68. Window frames hung in such a way that the bottom edge swung out over a footpath at a level dangerous to pedestrians.	This is a real danger, especially in the dark. Either footpaths should not be formed close to the wall of the building, or the extent of the window movement should be restricted.	-
Lighting, etc.		
69. Excessively bright ward lighting and reflection from glossy walls.	Lighting fittings should not cause discomfort to patients. Brightness should be controlled to avoid glare, and lights required for one patient should not be such as to disturb others.	Planning Note No. 1, paragraph 123 et seq.
70. Inadequate night lighting.	A low intensity high level light is preferred.	-
71. Bed-cubicle curtains obscuring night lights.	Low level light fittings are unsuitable for this reason, and high level diffuse lighting would obviate the trouble.	-
72. Unsuitable bed-head lights with switch inaccessible to patient.	Simple fittings which permit limited movement, and a portable handset with light switch incorporated, should be available for the patient.	-
73. Bed-head lights too low in relation to standard bed-heads.	Bed-head lights should be fixed some 6 ft. from floor level and possibly off-centre.	Planning Note No. 1, paragraph 124.
74. Corridor lighting badly placed in relation to patients trying to sleep.	Lamps in corridors should be positioned so that their light does not disturb patients through glazed partitions at night.	Planning Note No. 1, paragraph 123.
75. Inconveniently located light switches.	Rooms generally should be switched individually, and this applies also to multi-bed bays in rooms. Zoned switching of corridors should be carefully considered.	-
76. Call warning lights badly placed.	Call warning lights should be prominently placed in a nurse circulation area. Cancel buttons should not be higher than 5 ft.	-

Defects	*Recommendation*	*Reference*
Lighting, etc. (contd.)		
77. Corridor lights badly placed in relation to direction notices, e.g. ward numbers.	Under study.	Design Note on Signposting (being drafted).
78. Bad signposting; colours blending too successfully with background.	A standard alphabet and easily recognisable colour coding are being formulated. Signposting and decoration should be co-ordinated.	Design Note on Signposting (being drafted).
79. Lighting fixtures in positions requiring the erection of scaffolding to change bulbs.	Only exceptionally is this justifiable.	-
80. Illuminated exit signs so bright as to cause nuisance in ward areas at night.	See item 77.	-
Storage		
81. Cupboards too high for easy use.	Except in special cases, cup-boards should be usable without danger by a nurse standing on the floor, i.e. top shelf should not be higher than 5 ft. to 5 ft. 6 ins. depending on circumstances.	-
	A modular range of cupboards for hospital use has been developed and prototypes are being tested.	Design Note on Storage (in draft).
	Anthropometric data is available.	Design Note on User Requirements (in draft).
82. Inadequate storage for patients' clothing.	Each patient should have a clothes hanging cupboard as convenient to the bed as pos-sible, preferably built-in within the bed-curtained area.	Planning Note No. 1, pages 32, 33, 37 and 38.
83. Inadequate space between cupboards opposite each other in another room.	This depends on whether access is required to opposite cupboards simultaneously or only to one with room to pass.	Design Note on User Requirements (in draft)
84. Drawers and shelves too deep for proposed contents.	-	Design Note on Storage (in draft).
85. No means of identifying contents of drawers of identical appearance.	Easily applied and alterable labels are required.	Design Note on Storage (in draft).

Defects	*Recommendation*	*Reference*
Storage (contd.)		
86. Shelving badly spaced and not adjustable.	-	Design Note on Storage (in draft). Design Note on User Requirements (in draft).
87. Omission of necessary general storage areas.	Both central and local storage should be carefully assessed in the brief.	-
88. Widely dispersed general storage areas.	Storage requirements, especially in clinical areas, should be analysed and grouped to save staff time. (cf. ward preparation room). Central storage in the central supply department should be designed to work functionally just as in any other department. The brief should set forth how the supply, storage and distribution services are to be integrated.	Ward Planning Note, paragraphs 46 and 70.
89. Inadequate accommodation for opening and checking stores and the storage of "empties".	The accommodation should be properly assessed in the brief and should be provided under cover. It is frequently deficient and justifies careful assessment.	-
Sanitary fittings		
90. Patients' W.C. compartments too small.	For patients in sanichairs a compartment of 20 sq. ft. with outward opening door should be provided; it should contain a W.C. and small wash-hand basin.	Planning Note No. 1, paragraph 61 and page 35.
91. Internal W.C.s badly ventilated.	Mechanical extract ventilation should be provided at high level in W.C.s, the external vent being protected against back pressures and the outlet suitably discharged to clear the building.	Planning Note No. 1, paragraph 109
92. W.C.s too low for convenient use.	Seat should be approximately 17 ins. above finished floor level.	Design Note on Sanitary Fittings (in draft).
93. W.C.s too high for sanichairs (or alternatively, sanichairs too low for W.C.s).	Seat should be approximately 17 ins. above finished floor level. The clearance height of sanichairs should be checked before ordering.	Design Note on Sanitary Fittings (in draft).

Defects	*Recommendation*	*Reference*
Sanitary fittings (contd.)		
94. Sinks at nurses' stations.	No sink is required at nurses' station.	Planning Note No. 1, paragraph 78 and page 43.
95. Sink fittings, e.g. in laboratories, of an unsatisfactory type.	The appropriate type of tap, waste, etc. should be ascertained, e.g. high swan necked taps with nozzles suitable for attaching tubes.	-
96. Wash-hand basins with elbow operated taps where wrist operated taps are more appropriate.	Elbow operated taps should be provided in theatre scrub rooms and treatment rooms; wrist operated taps should be provided in all other clinical areas.	-
97. Shower compartments with no suitable clothes-hanging or drying space.	The recommended area of 30 sq. ft. provides space for the shower and drying departments.	Planning Note No. 1, page 36 Planning Note No. 1, Supplement - Data Sheets 1A and 2A.
98. Wash-hand basins without adjacent shelving.	A small easily cleaned shelf is necessary in patient areas for patients using toilet bags etc., and in W.C. compartments for visitors who may be expected to have handbags, gloves etc.	Planning Note No. 1, page 35.
99. Ward baths too high or too low.	The bottom of the bath must be not less than 10 ins. clear above finished floor level if a patient hoist is to be used. Except for childrens' baths the top of the rim should be between 2 ft. 3 ins. and 2 ft. 8 ins. above floor level. Bath clearances and dimensions of the proposed patient hoists should be cross-checked.	Design Note on Sanitary Fittings (in draft).
100. The inclusion of W.C.s in all bathrooms.	Normally there should not be a W.C. in a patients' bathroom since the inclusion of two facilities in one room restricts the use of either. In exceptional cases it may be justified.	Planning Note No. 1, page 36.
101. Sinks so low (to conform with low window sills) that even the smallest nurses have to bend to use them.	Rims of ordinary sinks should be between 2 ft. 8 ins. and 2 ft. 11 ins.	Design Note on User Requirements (in draft).
102. W.C. ventilating only into an adjacent office.	W.C.s. should either have a window to the open air in the normal way or if internal have mechanical extract as in paragraph 109 of Planning Note 1: (See item 91 above).	-

Defects	*Recommendation*	*Reference*
Floor and wall finishes		
103. Cracked terrazzo floors.	Careful specification and supervision is necessary. Causes of failure in operating theatres are analysed in White's Report.	British Standard Code of Practice CP 204. Finishes and Fittings in Operating Suites - T. White A.R.I.B.A. (Newcastle Regional Hospital Board)
104. Unsatisfactory sealing of floor surfaces.	Manufacturers' directions should be ascertained and followed.	-
105. Absorbent surfaces (walls and floors) liable to staining e.g. in laboratories and post-mortem rooms.	Study in progress. Especially easily-cleaned finishes are recommended in post-mortem rooms.	Building Note No. 15 (under revision). Building Note No.20 paragraph 19. "The Hospital" August 1963 page 472. Design Note on Partitions and Wall Finishes (in draft)
106. Unsuitable wall finishes - even to the point of being detrimental to the work of the department, e.g. plywood finish on laboratory walls leading to the growth of moulds.	Function of Departments should be clearly stated and properly appreciated when specifying finishes.	Design Note on Partitions and Wall Finishes (in draft).
Equipment and fittings		
107. Badly placed patients' call buttons.	Must be easily accessible to an incapacitated patient, e.g. by means of an extension lead.	Planning Note No. 1, paragraph 131.
108. Handsets too heavy and too complicated.	The patient's call button must be easily distinguishable by touch from all other features of any handset.	Planning Note No. 1, paragraph 131.
109. Badly located telephones, e.g. in out-patient consulting rooms leading to unnecessary and inconvenient interruptions during consulting work.	There should not be telephones in consulting rooms but they should be readily available nearby. Ward telephones should be carefully located for convenience of staff without disturbance to patients.	Planning Note No. 1, paragraph 136. Building Note No. 12, page 11. Planning Note on Out-Patient Departments (being drafted).
110. Equipment not fulfilling the desired function, e.g. over-elaborate trolleys.	The range of trolleys purpose designed for specific functions should be carefully assessed and limited. Improved facilities and more general standardisation has enhanced the usefulness of the more simple type of treatment trolley.	S.H.H.D. and M.O.H. have appointed a Specification Working Group to consider trolley requirements (other than patient trolleys and food trolleys).
111. Purpose-built medicine tray with lid not high enough for some bottles regularly used.	In such cases where a purpose designed trolley may be justified it should at least fulfil its purpose.	See item 110 above.

Defects	*Recommendation*	*Reference*
Equipment and fittings (contd.)		
112. Out-patient treatment room with excessively costly fixed equipment e.g. large theatre lamp and water sterilisers.	Over-elaborate and unnecessary equipment should be avoided. Published guidance on equipment should be consulted. In the quoted examples an adjustable spotlight is recommended, and there should be no water sterilisers (central sterile supplies).	Building Note No. 12, page 10 Equipment Note No. 12, page 27
113. Inefficient bed-pan washers.	This is all too common.	-
114. Noisy bed-pan racks in wards.	Metal pans in metal racks are the worst offenders and this particular combination should be avoided. Other materials such as plastics and papier mache should be investigated. (Heated racks are unnecessary with disposable bed-pans).	-
115. Radiators subtracting from bench space, e.g. in laboratories and pharmacies.	This sort of compromise planning is seldom satisfactory from any point of view. Replanning or alternative forms of heating (e.g. ceiling heating) should be considered.	Building Note. No. 15, page 7.
116. Lifts not self-levelling particularly in areas where patients' trolleys and delicate apparatus have to be moved.	Lifts should level to within plus or minus quarter of an inch.	-
117. Lifts too small for beds with certain attachments.	In order to accommodate beds with attachments, one or two of a group of lifts should be of 4,500 lbs. capacity (car size: 8 ft. 9 inches x 5 ft. 7 inches)	B.S. 2655 part 3 (Design Note on Lifts (in draft).
118. Difficult access to lift motors; repairs delayed due to use of components difficult to replace.	Motor-housings must allow space for removal and replacement of machinery as well as for routine maintenance. Equipment selected should be of a standard pattern with readily available spares.	-
119. (a) Taps in scrub rooms too long and projecting so close to plate glass screens as to make hand-washing awkward. (b) Control taps situated deep inside a fume cupboard.	This sort of insufficiently considered detailing is to be avoided.	-

Defects	Recommendation	Reference
Equipment and fittings (contd.)		
120. Provision for service hoists which have never been used.	Service hoists can only be effective where clearance by staff or mechanical means can be assured.	-
121. Inadequate central incinerator.	All too often this vital function is the Cinderella of even the newest hospitals. An efficient incinerator should be gauged both to the size and nature of the disposal load.	-
122. Inefficient ward incinerators.	Sealed disposal bags and regular collection are preferable to inefficient ward incinerators. If incinerators must be installed at wardlevel efficiency must be guaranteed, bearing in mind that they will almost certainly be overloaded in use.	-
Engineering services		
123. Service ducts opening direct into clean utility (preparation) rooms.	Access to service ducts must be from rooms or corridors which do not require a clean atmosphere, and as far as possible should be arranged so as not to interfere with departmental work.	-
124. Grossly cramped duct space.	Ample access space for all engineering services must be allowed for in planning. Difficulty also arises because of a lack of co-ordination, and service engineers must acquaint themselves with the requirements of all services, e.g. water supply, drainage, heating, electrical etc.	-
125. Inadequately lagged pipes (in service ducts) which require covering before conditions suitable for access by servicing staff.	Pipes should be adequately lagged in the first place to conserve heat, and equipment requiring regular maintenance should be easily accessibly without reaching over, across, or under pipes.	-
126. Difficult access and inadequate space for servicing fixed equipment.	See paragraph 122.	-
127. Plant for cold room located in an adjacent provision store causing over-heating there.	-	-

Defects	Recommendation	Remarks
Engineering services (contd.)		
128. Calorifier room in main kitchen located next to a general provisions store which thus becomes overheated and unsuitable for its purpose.	-	-
129. Sterilisers installed in such a way that changing electrodes involved disconnection and removal of the whole steriliser.	This is a particular example of the maintenance access difficulties referred to in item 126.	-
130. Poor zoning and control of heating so that some areas must be cold if the others are not unreasonably hot.	A comfort pattern for the hospital should be established from the start and there should be an effective channel of communications between users and hospital engineer to ensure that he is aware of local departmental requirements. The consequences of phased developments on heating systems should be carefully anticipated. Control of heating and other services should be the subject of careful instruction during the commissioning of a new building.	-
131. Thermostat for regulation of heating system placed over a steam oven.	-	-
132. Exposed hot pipes which might be a danger in patient areas e.g. in bathroom.	Pipes which might be a danger when at a temperature of 140° F. or above should be protected.	-
133. Festoons of pipes e.g. in sluice rooms leading to dust collection.	This should be anticipated in detailed services planning and proper provision made.	-
134. Enclosure of pipes to prevent dust but rendering valves inaccessible.	See item 133: valves must be accessible.	-
135. Hot pipes running in ceilings, walls etc. causing marks and necessitating frequent redecoration.	This is a disadvantage of embedded pipe heated ceilings, but hot circulating pipes should be located so as not to give rise to this.	-
136. Inadequate number of power points especially in laboratory areas.	Refer to published guidance in Building Notes.	-

Defects	Recommendation	Reference
Engineering services (contd.)		
137. Unlabelled valves and switches.	Proper labelling should be included in the specification, and carefully checked during the commissioning procedures.	-
138. Fuse boxes mounted so high as to require extension ladders for access.	-	-
139. Inconvenient suction points in ward areas with patients having to be moved from bed to bed for diagnostic tests.	Suction points in ward areas should be provided for single rooms, for each bed in an intensive care unit, for every two beds in multi-bed rooms and in treatment rooms.	Planning Note No. 1, paragraphs 138 and 193.
140. Tea Bar cubicle with no means of ventilation and in which a steam unit for hot water was installed.	-	-
141. Nuisance from poor ventilation of animal accommodation e.g. during cage sterilisation.	Six air changes per hour is recommended.	Cruelty to Animals Act 1876 Draft Building Note on Laboratories and Animal Houses (to replace Building Note No. 15).
External		
142. Pointlessly circuitous paths.	-	-
143. Poor drainage at basement exits.	-	-
144. Staining of external woodwork due to faulty detailing.	-	-